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## Databases

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L4	2	5,963,653.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L5	2	5,802,256.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L7	2	5,623,609.pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L1	28	Markov Network	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
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L14	25	7 and (link\$1 or node\$1)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L15	2	2 and (marginal with probabilit\$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
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L17	2	2 and ("message passing")	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L18	541	Bayesian with network\$1	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L19	434	Markov with network\$1	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L20	915	18 or 19	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L21	217	20 and cluster\$1	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L22	77	21 and propagat\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L25	104	21 and (link\$1 and node\$1)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L28	0	21 and Kikuchi	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
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L24	7	21 and (probabilit\$3 with propagat\$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L26	18	21 and (message with pass\$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB
L27	3	21 and "termination condition"	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB

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Document Kind	Codes	Title	Issue Date	Current OR	Abstract
US	20030126551 A1	Hybrid automatic repeat request system and method	20030703	714/790	
US	20030093272 A1	Speech operated automatic inquiry system	20030515	704/231	
US	20030065989 A1	Evaluating and optimizing error-correcting codes using projective analysis	20030403	714/703	
US	20030037298 A1	Method and apparatus for low density parity check encoding of data	20030220	714/752	
US	20030033575 A1	Methods and apparatus for decoding LDPC codes	20030213	714/799	
US	20030023917 A1	Node processors for use in parity check decoders	20030130	714/749	
US	20020188906 A1	Method and coding apparatus using low density parity check codes for data storage or data transfer	20021212	714/755	
US	20020172434 A1	One-pass super-resolution images	20021121	382/299	
US	20020122570 A1	Real-time crowd density estimation from video	20020905	382/103	
US	20020116677 A1	Decoder for iterative decoding of binary cyclic codes	20020822	714/781	
US	20020116196 A1	Speech recognizer	20020822	704/270	
US	20020103776 A1	Scaleable object recognition with a belief model	20020801	706/49	
US	20020071504 A1	Method for iterative and non-iterative data detection using reduced-state soft-input/soft-output	20020613	375/341	
US	20010011260 A1	Automated diagnosis of printer systems using Bayesian networks	20010802	706/46	
US	6584376 B1	Mobile robot and method for controlling a mobile robot	20030624	700/245	
US	6535865 B1	Automated diagnosis of printer systems using Bayesian networks	20030318	706/52	
US	6496184 B1	Method for inferring scenes from test images and training data using probability propagation	20021217	345/419	
US	6380934 B1	Estimating targets using statistical properties of observations of known targets	20020430	345/419	
US	6263103 B1	Estimating scenes using statistical properties of images and scenes	20010717	382/173	
US	6240051 B1	Acoustic surveillance apparatus and method	20010529	367/127	
US	6070140 A	Speech recognizer	20000530	704/275	
US	5839105 A	Speaker-independent model generation apparatus and speech recognition apparatus each equipped with a state transition model design method and voice recognition method and apparatus using same	19981117	704/256	
US	5812975 A	Acoustic model generating method for speech recognition	19980922	704/256	
US	5799277 A	Method of generating a subword model for speech recognition	19980825	704/256	
US	5677988 A	Method and apparatus for voice-interactive language instruction	19971014	704/256	
US	5634086 A	Artificial intelligence software shell for plant operation simulation	19970527	704/270	
US	5412756 A	Interruptibility/priority control scheme for artificial intelligence software shell	19950502	706/45	
US	5402526 A	Case-based knowledge source for artificial intelligence software shell	19950328	706/49	
US	5402524 A	Control process for artificial intelligence software shell	19950328	706/45	
US	5398304 A	UNKNOWN TARGET AND METHOD FOR ESTIMATING UNKNOWN TARGET FROM OBSERVED TARGET	19950314	706/49	
JP	2000172842 A	METHOD FOR ESTIMATING SCENE FROM IMAGE	20000623		
JP	2000172841 A	SPEAKER ADAPTIVE DEVICE AND VOICE RECOGNITION DEVICE	20000623		
JP	09081179 A	UNSPECIFIED SPEAKER MODEL GENERATING DEVICE AND VOICE RECOGNITION DEVICE	19970328		
JP	09081178 A	SPEAKER ADAPTATION DEVICE AND SPEECH RECOGNIZING DEVICE	19970328		
JP	08241095 A	SPEAKER ADAPTATION DEVICE AND SPEECH RECOGNITION DEVICE	19960917		
JP	08110792 A		19960430		

EP 1026634 A2	Estimating targets using statistical properties of observations of know targets	20000809
EP 1026631 A2	Method for inferring scenes from test images and training data using probability propagation in	20000809
EP 1006481 A2	Estimating scenes using statistical properties of images and scenes	20000607
EP 1160679 A	Probability system modeling for Markov networks uses message passing within loops and find	20011205
EP 1160678 A	State probability approximation method for modeling probabilistic systems in Markov networks	20011205
EP 1026631 A	Inferring scene from test images method for motion detection in videos by modelling probabilities	20021217
DE 4241688 A	Generating sub-word model for speech recognition - successively dividing conditions in original	19930923
SU 1534472 A	Homogeneous markov circuit fidelity determin. appts. - has input of summator connected to data	19900107
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Computer, Volume: 27 Issue: 12, Dec. 1994

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[\[Abstract\]](#) [\[PDF Full-Text \(748 KB\)\]](#) **IEEE JNL****2 Computer vision for interactive computer graphics***Freeman, W.T.; Anderson, D.B.; Beardsley, P.; Dodge, C.N.; Roth, M.; Weissman, C.D.; Yerazunis, W.S.; Kage, H.; Kyuma, I.; Miyake, Y.; Tanaka, K.;*

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[\[Abstract\]](#) [\[PDF Full-Text \(1272 KB\)\]](#) **IEEE JNL****3 Bayesian decision theory, the maximum local mass estimate, and color constancy***Freeman, W.T.; Brainard, D.H.;*

Computer Vision, 1995. Proceedings., Fifth International Conference on, 20-23 June 1995

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[\[Abstract\]](#) [\[PDF Full-Text \(840 KB\)\]](#) **IEEE CNF****4 A gesture controlled human interface using an artificial**

**retina chip**

*Miyake, Y.; Freeman, W.T.; Ohta, J.; Tanaka, K.; Kyuma, K.;*  
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Page(s): 292 -293 vol.1

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**5 Learning low-level vision**

*Freeman, W.T.; Pasztor, E.C.;*  
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Page(s): 1182 -1189 vol.2

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**6 Computer vision for television and games**

*Freeman, W.T.;*  
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Decision and Control, 1993., Proceedings of the 32nd IEEE

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Page(s): 1241 -1246 vol.2

[\[Abstract\]](#) [\[PDF Full-Text \(488 KB\)\]](#) **IEEE CNF****2 Multiscale representations of Markov random fields***Luetttgen, M.R.; Karl, W.C.; Willsky, A.S.; Tenney, R.R.;*

Acoustics, Speech, and Signal Processing, 1993. ICASSP-93., 1993

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Image Processing, 1994. Proceedings. ICIP-94., IEEE International Conference , Volume: 3 , 13-16 Nov. 1994

Page(s): 451 -455 vol.3

[\[Abstract\]](#) [\[PDF Full-Text \(396 KB\)\]](#) **IEEE CNF****4 Maximum-likelihood estimation of multiscale stochastic model parameters**

*Chou, K.C.;*

Time-Frequency and Time-Scale Analysis, 1996., Proceedings of the IEEE-SP International Symposium on , 18-21 June 1996

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**5 Multiscale representations of Markov random fields**

*Luetngen, M.R.; Karl, W.C.; Willsky, A.S.; Tenney, R.R.;*

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Page(s): 3377 -3396

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**6 Efficient multiscale regularization with applications to the computation of optical flow**

*Luetngen, M.R.; Clem Karl, W.; Willsky, A.S.;*

Image Processing, IEEE Transactions on , Volume: 3 Issue: 1 , Jan. 1994

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**7 Likelihood calculation for a class of multiscale stochastic models, with application to texture discrimination**

*Luetngen, M.R.; Willsky, A.S.;*

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**8 Multiscale smoothing error models**

*Luetngen, M.R.; Willsky, A.S.;*

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*Luetngen, M.R.; Karl, W.C.; Willsky, A.S.; Tenney, R.R.;*

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*Luetngen, M.R.; Willsky, A.S.;*

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Fault-Tolerant Computing, 1993. FTCS-23. Digest of Papers., The Twenty-Third International Symposium on , 22-24 June 1993

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[\[Abstract\]](#) [\[PDF Full-Text \(948 KB\)\]](#) **IEEE CNF****2 All-phoneme ergodic hidden Markov network for unsupervised speaker adaptation***Miyazawa, Y.; Takami, J.-I.; Sagayama, S.; Matsunaga, S.;*

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*Ce Liu; Heung-Yeung Shum; Chang-Shui Zhang;*

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*Se-Jin Oh; Hyun-Yeol Chung; Cheol-Jun Hwang; Bum-Koog Kim; Ito, A.;*

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**11 Performance analysis of a star topology of interconnected networks under 2nd-order Markov network output processes**

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99%

Sham Kakade , Michael Kearns , John Langford , Luis Ortiz

Proceedings of the 4th ACM conference on Electronic commerce June 2003

We examine correlated equilibria in the recently introduced formalism of graphical games, a succinct representation for multiplayer games. We establish a natural and powerful relationship between the graphical structure of a multiplayer game and a certain Markov network representing distributions over joint actions. Our first main result establishes that this Markov network succinctly represents all correlated equilibria of the graphical game up to expected payoff equivalence. Our second main re ...

**2** [Learning Markov networks: maximum bounded tree-width graphs](#)

97%

David Karger , Nathan Srebro

Proceedings of the twelfth annual ACM-SIAM symposium on Discrete algorithms January 2001

Markov networks are a common class of graphical models used in machine learning. Such models use an undirected graph to capture dependency information among random variables in a joint probability distribution. Once one has chosen to use a Markov network model, one aims to choose the model that "best explains" the data that has been observed; this model can then be used to make predictions about future data.

We show that the problem of learning a maximum likelihood Ma ...

**3** [Independence is good: dependency-based histogram synopses for high-dimensional data](#)

85%

Amol Deshpande , Minos Garofalakis , Rajeev Rastogi

ACM SIGMOD Record , Proceedings of the 2001 ACM SIGMOD international conference on Management of data May 2001

Volume 30 Issue 2

Approximating the joint data distribution of a multi-dimensional data set through a compact and

accurate histogram synopsis is a fundamental problem arising in numerous practical scenarios, including query optimization and approximate query answering. Existing solutions either rely on simplistic independence assumptions or try to directly approximate the full joint data distribution over the complete set of attributes. Unfortunately, both approaches are doomed to fail for high-dimensional data ...

- 4 An architecture for probabilistic concept-based information retrieval 77%  
R. M. Fung , S. L. Crawford , L. A. Appelbaum , R. M. Tong  
**Proceedings of the 13th annual international ACM SIGIR conference on Research and development in information retrieval** December 1989
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**ACM SIGIR Forum** April 2002  
Volume 36 Issue 1
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Neoklis Polyzotis , Minos Garofalakis  
**Proceedings of the 2002 ACM SIGMOD international conference on Management of data** June 2002  
Effective support for XML query languages is becoming increasingly important with the emergence of new applications that access large volumes of XML data. All existing proposals for querying XML (e.g., XQuery) rely on a *pattern-specification language* that allows path navigation and branching through the XML data graph in order to reach the desired data elements. Optimizing such queries depends crucially on the existence of concise synopsis structures that enable accurate compile-time selection ...
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Lee D. Erman , Frederick Hayes-Roth , Victor R. Lesser , D. Raj Reddy  
**ACM Computing Surveys (CSUR)** June 1980  
Volume 12 Issue 2
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K. B. Irani , V. L. Wallace  
**Journal of the ACM (JACM)** October 1971  
Volume 18 Issue 4
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Sandrine Balbo , Joëlle Coutaz , Daniel Salber  
**Proceedings of the 1st international conference on Intelligent user interfaces** February 1993

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77%

David R. McGee , Philip R. Cohen , R. Matthews Wesson , Sheilah Horman

**Proceedings of the SIGCHI conference on Human factors in computing systems: Changing our world, changing ourselves** April 2002

In command posts, officers maintain situational awareness using paper maps, Post-it notes, and hand-written annotations. They do so because paper is robust to failure, it is portable, it offers a flexible means of capturing information, it has ultra-high resolution, and it readily supports face-to-face collaboration. We report herein on an evaluation comparing maps and Post-its with a tangible multimodal system called Rasa. Rasa augments these paper tools with sensors, enabling it to recognize t ...

2 [Controlling Complexity: An evaluation of a multiple interface design solution for bloated software](#)

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Joanna McGrenere , Ronald M. Baecker , Kellogg S. Booth

**Proceedings of the SIGCHI conference on Human factors in computing systems: Changing our world, changing ourselves** April 2002

This study examines a novel interface design for heavily-featured productivity software. The design includes two interfaces between which the user can easily toggle: (1) an interface personalized by the user containing desired features only, and (2) the default interface with all the standard features. This design was prototyped as a front-end to a commercial word processor and evaluated in a comprehensive field study. The study tested the effects of different interface designs on users' satisfacti ...

3 [CyberCode: designing augmented reality environments with visual tags](#)

77%

Jun Rekimoto , Yuji Ayatsuka


**Proceedings of DARE 2000 on Designing augmented reality environments** April 2000

The CyberCode is a visual tagging system based on a 2D-barcode technology and provides several features not provided by other tagging systems. CyberCode tags can be recognized by the low-cost CMOS or CCD cameras found in more and more mobile devices, and it can also be used to



determine the 3D position of the tagged object as well as its ID number. This paper describes examples of augmented reality applications based on CyberCode, and discusses some key characteristics of tagging technologies ...

4 Design and technology for Collaborage: collaborative collages of information on physical walls 77%

 Thomas P. Moran , Eric Saund , William Van Melle , Anuj U. Gujar , Kenneth P. Fishkin , Beverly L. Harrison

**Proceedings of the 12th annual ACM symposium on User interface software and technology**  
November 1999

A Collaborage is a collaborative collage of physically represented information on a surface that is connected with electronic information, such as a physical In/Out board connected to a people-locator database. The physical surface (board) contains items that are tracked by camera and computer vision technology. Events on the board trigger electronic services. This paper motivates this concept, presents three different applications, describes the system architecture and com ...

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